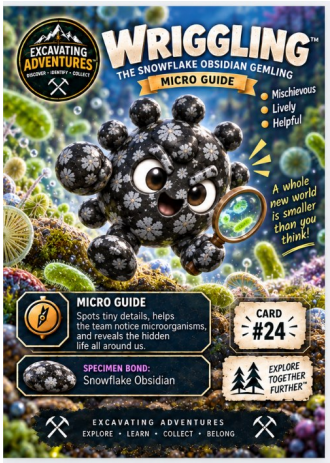
Helpful Microbes & Food

Fermentation Falls with Wriggling



Learning target

Explain one useful role of microbes.

Before you begin

Use the reference page and discussion prompts on their own, or open the optional browser adventure. No earlier lesson or physical kit is required.

For online play: use an internet-connected current browser with local storage enabled. Read the three-part Gemling briefing, answer the quick check, and apply the evidence at three checkpoints. Retry feedback supports review; results are not a secure test or gradebook.

Use for teacher-led review, science centers or partner practice. Independent readers may need support with the vocabulary below. The design target is grades 3-5; choose support based on the learner.

Vocabulary and concepts to discuss

Yeast; fermentation overview; food production; human uses

Open Fermentation Falls - direct lesson link

Scan the QR code or use the clickable link. This guide is usable offline; the adventure runs on an external educational website.

Helpful Microbes & Food - key ideas

1. The first clues

People use some microbes in food production. Yeast is a fungus used in processes such as bread making.

2. How the clues connect

Yeast can use sugars and release carbon dioxide during fermentation. Gas bubbles can help bread dough rise under suitable controlled conditions.

3. Our evidence record

Our supplied record shows bubbles and rising dough in a prepared yeast process. That supports a useful role, not a claim that every unknown bubbling mixture is safe to eat.

Keep the science accurate

No culturing unknown microbes or handling mold. Viruses are not treated as cellular organisms. Avoid all-microbes-are-harmful framing.

Apply the evidence

Use a specific observation from this lesson to explain one choice. Point to a clue, then connect that clue to a scientific idea.

Curriculum reference: https://www.nextgenscience.org/dci-arrangement/ms-ls1-molecules-organisms-structures-and-processes

Talk through the evidence

1. Which microbe is used in this bread example?

Expected answer: Yeast

Reasoning: People use some microbes in food production. Yeast is a fungus used in processes such as bread making.

2. Which gas helps the dough rise?

Expected answer: Carbon dioxide

Reasoning: Yeast can use sugars and release carbon dioxide during fermentation. Gas bubbles can help bread dough rise under suitable controlled conditions.

3. What evidence is in the record?

Expected answer: Bubbles and rising dough

Reasoning: Our supplied record shows bubbles and rising dough in a prepared yeast process. That supports a useful role, not a claim that every unknown bubbling mixture is safe to eat.

4. Does this make all bubbling mixtures edible?

Expected answer: No

Reasoning: Our supplied record shows bubbles and rising dough in a prepared yeast process. That supports a useful role, not a claim that every unknown bubbling mixture is safe to eat.

Guide the discussion

Ask learners to name the evidence that supports their answer. If an answer differs, revisit the matching key idea on page 2 and invite a revised explanation.

Online rewards: this lesson grants one fixed digital Expedition Discovery. Five saved digital Gemling friends become available only after all six distinct subject lessons are complete, in any order. Digital rewards do not establish physical ownership.